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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/697,518

10/30/2003

Bruno Hans Haider

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8149

6147 7590 05/28/2009  
GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER

CATTUNGAL, SANJAY

ART UNIT

PAPER NUMBER

3768

NOTIFICATION DATE

DELIVERY MODE

05/28/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ldocket@crd.ge.com  
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<b>Office Action Summary</b>	<b>Application No.</b> 10/697,518	<b>Applicant(s)</b> HAIDER ET AL.	
	<b>Examiner</b> SANJAY CATTUNGAL	<b>Art Unit</b> 3768	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-8,13,14 and 21-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,13,14 and 21-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/30/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1, 2, 4-8, 13, 14, and 21-27 have been considered but are not persuasive. Applicant argues that Hwang does not teach "controlling a plurality of reconfigurable pulsers in a probe utilizing the one or more signals from the external system; and operating said plurality of transducers utilizing signals from said plurality of reconfigurable pulsers, wherein each pulser is configured to a respective transducer". Examiner would like to point out that Hwang fig. 5 teaches "controlling a plurality of reconfigurable pulsers in a probe utilizing the one or more signals from the external system (fig. 3 element 30); and operating said plurality of transducers utilizing signals from said plurality of reconfigurable pulsers (Fig. 5 element 402, 404, 414 and 416), wherein each pulser is configured to a respective transducer (fig. 5 element 1, 33, 65, and 97). Hence all claim limitations have been met and is made final.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. **Claims 1, 2, 4, 5, 7, 8, 13, 14, and 21-27 rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 6,142,946 to Hwang et al.**

4. Regarding **Claims 1, 2, 4, 13, 14, 21, 22, and 24-26** Hwang teaches a probe comprising: a plurality of transducers (Abstract Fig. 3 element 12); and a plurality of reconfigurable pulsers (Fig. 5 element 402, 404, 414, and 416) within said probe responsive to one or more transmit timing signals received from an external system to transmit pulses to said plurality of transducers (Fig. 3 element 30), wherein each reconfigurable pulser is coupled to a respective transducer (Fig. 5 element 402, 404, 414, and 416), and wherein said probe further includes a multiplexer that receives said timing signals from said external system and provides said signals to said plurality of transducers.(Fig. 3 element 18)

5. Regarding **Claims 5 and 23**, Hwang teaches each transducer has a dedicated pulser. (Fig. 5 element 402, 404, 414, and 416)

6. Regarding **Claim 7** Hwang teaches the use of a digital to analog converter. (Fig. 4 element 338)

7. Regarding **Claim 8** Hwang teaches pulsers are responsive to one or more transmit signals received from the imaging system. (Fig. 5 element 408 and 410)

8. Regarding **Claim 27** Hwang teaches sending control signals from the probe to the external system. (Fig. 3)

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang in view of Little (US 5,893,363).**

11. Regarding **Claim 6** Hwang teaches all of the above claimed limitations but does not expressly teach pulsers to be bipolar, unipolar or combination of both and a conversion to set the timing signal to operate with low voltage pulsers.

12. Little teaches the drive signals for unipolar pulsers (202) to each terminal of pulser as well as the complementary waveforms applied when bipolar signals are used (See Fig.5, Col. 5, lines 2-10).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the pulsers of Hwang with the bipolar and unipolar pulsers as taught by Little in order to make both B-mode and Doppler imaging of the ultrasound machine possible.

***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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15. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANJAY CATTUNGAL whose telephone number is (571)272-1306. The examiner can normally be reached on Monday-Friday 9-5.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPC

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768